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Before the  
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FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the matter of )  
 )  
Amendment of Part 74 )  
of the Commission's )  
Rules regarding the )  
Instructional Television )  
Fixed Service (ITFS) )

Petition for Rule Making

1. John F.X. Browne, P.E. hereby requests that the Commission institute a Rule Making proceeding to correct a long-standing problem which exists in Part 74 of its rules governing the Instructional Television Fixed Service and, to the extent necessary to satisfy interservice adjacent channel considerations, to also amend appropriate sections of Parts 21 and 94 of the rules.

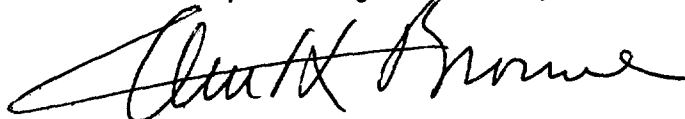
2. In the course of several related rule making proceedings, the petitioner has stated that the Commission's reference antenna specified in Par 74.937(a)(Figure 1) is not representative of a typical ITFS receiving antenna and, therefore, its mandated use in making interference calculations leads to erroneous results.

3. Specifically, the curve for the cross-polarized performance of the reference antenna is based on the erroneous assumption that the cross-polarization ratio that is achieved on axis (i.e., boresight) is maintained throughout the range of off-axis azimuths to  $\pm 180$  degrees. It has been previously noted that cross-polarization discrimination of any antenna decreases with off-axis azimuth and is nearly non-existent near  $\pm 180$  degrees. Yet the Commission's reference antenna assumes an unrealizable 20 dB ratio throughout the off-axis regions. Reference to the radiation pattern envelopes for any parabolic antenna used in this band will confirm the fallacy of this assumption.

4. In negotiations with Canada to establish a 2500-2686 MHz coordination agreement<sup>1</sup>, the Commission did in fact sanction the use of a more appropriate reference antenna pattern envelope. Attached hereto as Exhibit 1 is the pattern incorporated as part of that agreement.

5. It is requested that Par. 74.937(a) be amended to incorporate the Reference Receiver Antenna Pattern (Figure 1) referred to in the coordination agreement by substituting it in the place of Figure 1 currently incorporated in the Commission's rules.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "John F.X. Browne", written in a cursive style.

John F.X. Browne, P.E.

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<sup>1</sup>

Coordination of Assignments in the 2500-2686 MHz Band Within 80 KM of the United States of America/Canada Border: Public Notice released April 19, 1989.

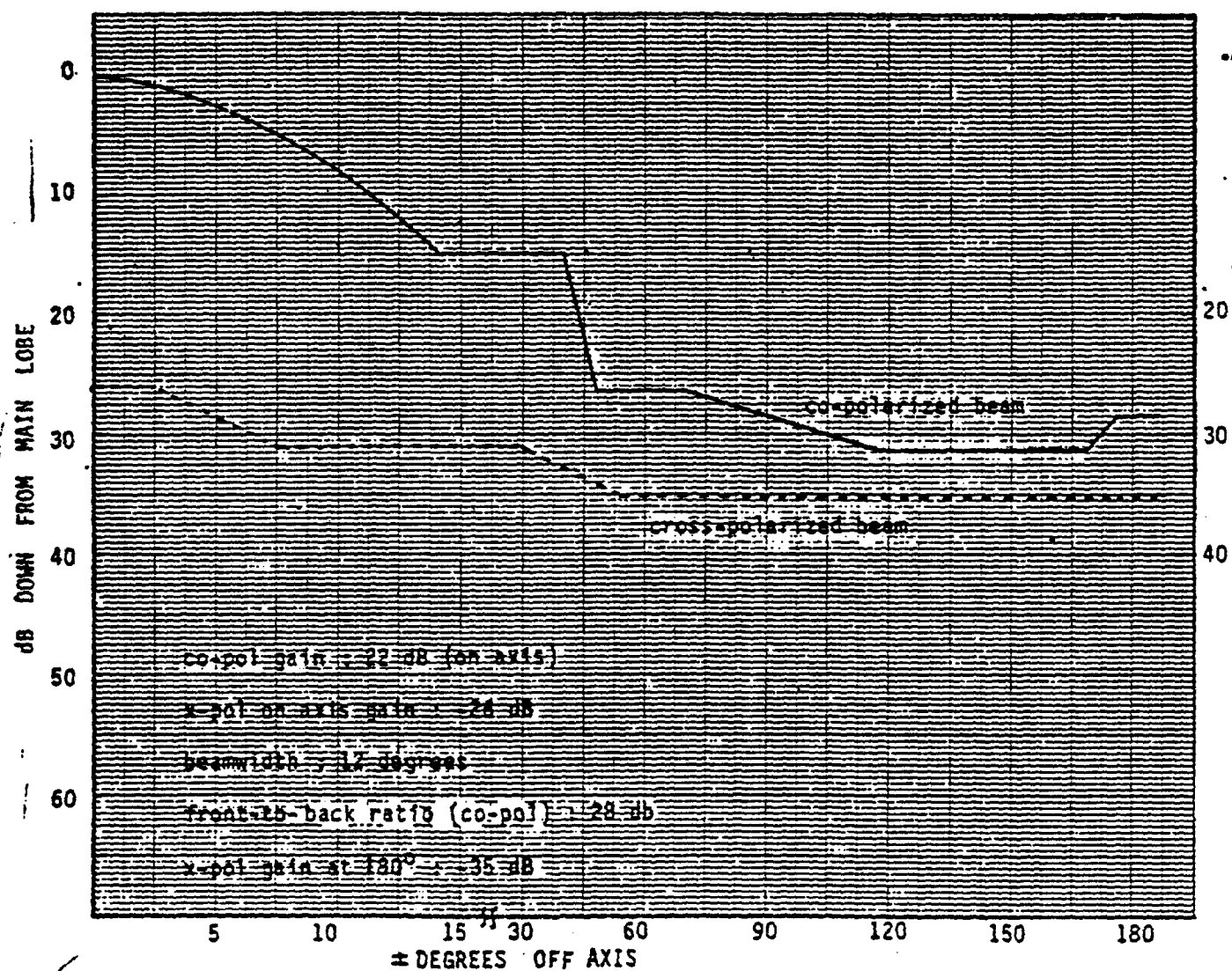


FIGURE 1: Reference Receiver Antenna Pattern